Journal of Theoretical and Applied Information Technology
31st October 2024. Vol.102. No. 20

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

FACTORS AFFECTING CRYPTOCURRENCY ADOPTION INTENTION AMONG INDIVIDUALS

[1] RABEA ABDULRAHMAN RAWEH, [2] MASLINDA MOHD NADZIR, [3] HUDA HAJI IBRAHIM

[1] School of Computing, Universiti Utara Malaysia 01060, Sintok, Kedah, Malaysia.

[2] School of Computing, Universiti Utara Malaysia 01060, Sintok, Kedah, Malaysia.

[3] School of Computing, Universiti Utara Malaysia 01060, Sintok, Kedah, Malaysia.

Email: [1]raweh202020@gmail.com, [2] maslinda@uum.edu.my, [3]huda753@uum.edu.my

ABSTRACT

Cryptocurrency is a modern sort of virtual currency that operates through blockchain technology and whose purpose is to be employed as a means of exchange. It is currently attracting the attention of academic and non-academic researchers as an alternative digital currency. The rise of cryptocurrency has recently gained a massive increase in cryptocurrency markets all around the globe. However, insufficient attention has been paid to the unveiling of determinants driving cryptocurrency adoption. Thus, the study aimed to fill the gap in the current literature by investigating factors that influence the adoption of cryptocurrency among individuals. The research used a survey questionnaire to gather data from a sample of 270 respondents. Therefore, the collected data was analyzed using structural equation modeling (SEM) and basic descriptive statistics. Furthermore, the results indicated that facilitating conditions, social influence, awareness, and security significantly affect cryptocurrency adoption intention. This study is critical for analyzing and gaining insights into individuals' primary motives for cryptocurrency adoption, which will help in formulating a regulatory framework.

Keywords: *Cryptocurrency, Adoption Intention, Facilitating conditions, Social Influence, Awareness, Security, Trust.*

1. INTRODUCTION

Over the last decade, globalization has brought major changes, improving people's lives, communication methods, and business operations [1]. This global interconnectedness has opened up new chances for humanity, even though its influence has not been consistent [1]. Some corporate scandals have drawn criticism and raised concerns about globalization's effects [2],[3]. Cryptocurrency is a digital type of currency that functions similarly to traditional money but uses blockchain technology for transactions, it goes by various names such as payment token, crypto token, electronic currency, cyber currency, virtual commodities, and virtual assets [4]. Unlike traditional currency, cryptocurrency allows direct peer-to-peer transactions, bypassing financial intermediaries like banks and government control [5]. This offers cryptocurrency users alternative possibilities beyond debit/credit cards or fiat currencies [6].

Bitcoin, developed by Satoshi Nakamoto in 2008, stands as the pioneering form of cryptocurrency. Bitcoin has evolved beyond its initial use as a currency for simple tasks like trading cryptocurrencies or seeking programming assistance [7]. An intriguing milestone in its history was the first reported commercial transaction involving the purchase of pizzas for 10,000 Bitcoins, worth USD 25 at the time, this transaction marked the beginning of Bitcoin's exponential increase in value.

Cryptocurrency had transitioned into a speculative instrument for short-term trading and was recognized as an investment within the crypto-asset category, Bitcoin has emerged as a widely recognized medium of exchange and currency for transactions, with its value experiencing significant fluctuations [8]. In 2021, the value of one Bitcoin reached approximately USD 67,000, showcasing remarkable growth since its inception twelve years prior. Notably, Bitcoin gained global recognition when El Salvador became the first country to formally adopt it as a legal tender [9].

Bitcoin trading operates uniquely as it occurs on regulated exchanges despite its prices

remaining unregulated. Following the introduction of Bitcoin, various other exchange-traded funds and crypto investment products were launched, enhancing the credibility of Bitcoin and cryptocurrency as viable alternatives for trading and investment. Cryptocurrency was considered a potentially disruptive technology capable of addressing persistent financial and business challenges [10]. In the same vein, the cryptocurrency market in May 2020 boasted approximately 5,400 different cryptocurrencies, with Bitcoin leading the pack with a market capitalization of US $160 billion [12], which resulted in a global user base of roughly 300 million cryptocurrency users, with approximately 5.8–11.5 million active wallets.

These advancements underscore cryptocurrency's potential to revolutionize the traditional financial system, positioning itself as a major currency [13]. However, despite these milestones, the adoption and spread of cryptocurrency remain slightly limited in scale and geographical reach [14]. Therefore, cryptocurrency has yet to fully realize its potential, as widespread acceptance is still lacking [15]. Scholars have extensively examined cryptocurrency, with a predominant focus on its utilization within Western contexts [16] [17],[18],[19],[20]. Consequently, scholarly insights into cryptocurrency, especially concerning developing countries, remain scarce [21].

Researchers such as [22],[23] have noted that despite the increasing adoption of cryptocurrency in developing nations, it remains in its early stages. Additionally, despite many users possessing adequate knowledge of this currency, only a fraction of them actively engage with it [22]. The discourse of cryptocurrency did not receive significant attraction until 2011, and it wasn't until 2013 that esteemed peer-reviewed journals began to publish papers on cryptocurrency-related topics [23].

Consequently, information concerning cryptocurrencies, particularly concerning other established financial technologies like mobile payments or internet banking, remains relatively scant. Moreover, previous research on cryptocurrency and blockchain adoption has predominantly focused on developed economies such as the USA and the UK [16], [17], [18],[24] [16],[17], [25]. Consequently, there has been limited exploration of cryptocurrency acceptance [17],[25]. Moreover, studies have often overlooked the perspectives of cryptocurrency users [26] and the factors significantly influencing cryptocurrency adoption, such as risk, trust, and security have not received sufficient examination [18].

In the case of developing countries, there is a lack of empirical examination regarding the adoption of cryptocurrency [16],[17],[18]. Specifically, the behavioural intention to adopt cryptocurrency is still largely unexplored. Correspondingly, the significance of regulations in raising awareness and enhancing consumer confidence in new financial technologies, thereby fostering widespread acceptance and usage [19].

Thus, the adoption of innovative technology could bolster a country's financial prowess and its citizens' autonomy, particularly in developing economies. Notwithstanding the prohibition, individuals continue to find ways to participate in cryptocurrency trading. Those involved in cryptocurrency trading often use overseas brokers or traditional methods such as cash payments directly to currency owners and transferring funds to broker accounts through electronic means. Consequently, the main aim of this research is to explore factors influencing cryptocurrency adoption intention among individuals.

2. LITERATURE REVIEW

Various research endeavors have aimed to understand cryptocurrency adoption better. One line of inquiry has delved into the technological aspects of comprehending cryptocurrency adoption. A study that integrated innovation diffusion theory, theory of planned behavior, transaction cost theory, and the risk-benefit concept, found that innovation characteristics (compatibility, observability, and trialability) and perceived benefits positively influenced attitudes toward Bitcoin and the intention to adopt it [27]. Using the UTAUT framework, [28] claimed that the behavioral intention to use cryptocurrency was influenced by performance expectancy, effort expectancy, and facilitating conditions.

Moreover, another approach that used a multimethod approach to reveal that security, usability, and costs were the primary factors considered in travelers' cryptocurrency adoption [29].

Additionally, similar research identified technology attachment and blockchain transparency

as prerequisites for developing trust in cryptocurrency, leading to its commercial usage among citizens [30]. Whereas, a systematic review highlighted scalability, transparency, privacy, credibility, and ethical concerns as barriers to cryptocurrency adoption [31]. Overall, these research studies on the adoption of cryptocurrencies indicated that they are a good solution for consumers looking to boost returns and significantly lower overall risk by using suitable diversification techniques.

Existing studies suggest that human behavioral aspects play a significant role in driving cryptocurrency adoption. A relative study using the theory of planned behavior as a framework found that social media usage influenced consumers' attitudes toward Bitcoin and subjective norms, subsequently impacting Bitcoin adoption [32]. Correspondingly, another research emphasized the relevance of the theory of planned behavior in elucidating cryptocurrency adoption intentions, identifying attitude, subjective norms, perceived behavioral control, and trust as significant determinants [33]. A study employing the fuzzy analytic hierarchy process ranked the importance of drivers compelling cryptocurrency investment. Their analysis addresses social influence as the most crucial factor, followed by facilitating conditions and perceived usefulness [34].

More recently, A similar development carried out research that concentrated on identifying determinants affecting CC investment among Malaysian investors. The study revealed that compatibility, trialability, ease of use, complexity, observability, and perceived value significantly influence the adoption of CC investment among Malaysian investors [35]. In summary, the previous literature revealed that cryptocurrency is a feasible financial alternative, that assists profits whereas it can also substantially diminish the total risk through appropriate diversification strategies.

Equally significance, cryptocurrencies still receive a low level of adoption, and the awareness of cryptocurrency is commonly related to lower educational levels and younger generations. In this regard, there is a considerable deficiency of empirical explorations covering cryptocurrency adoption. However, most studies highlighted the underlying factors impacting the adoption of cryptocurrency intention scarce studies covered factors influencing the adoption of cryptocurrency. Consequently, this study empirically intends to examine factors affecting the intention to adopt cryptocurrency among individuals.

2.1 Conceptual Model

The UTAUT proportions of facilitating condition and social influence are regarded as the most important predictors of behavioral intention to utilize technology [36], Furthermore, constructs such as facilitating environments and social influence were only seldom studied [37], The UTAUT model served as the theoretical foundation for the current research. To improve the predictability of the UTAUT model, awareness and security were included [38], The constructs were included due to user concerns about security and a lack of empirical research. As indicated in Figure 1, facilitating conditions, social influence, awareness, security, and trust were developed as indicators of cryptocurrency adoption intention among individuals.

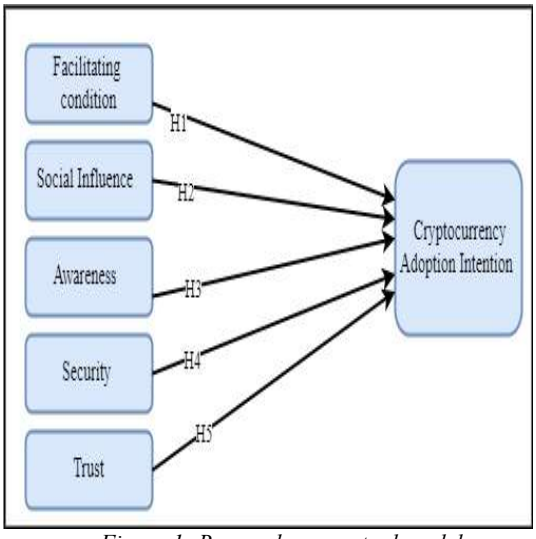

Figure 1: Research conceptual model

3. HYPOTHESIS DEVELOPMENT

3.1 Facilitating Conditions

The enabling condition was defined as consumers' perceptions of the availability of technological infrastructure and assistance necessary to adopt cryptocurrencies [25],[26]. People are more likely to embrace technology when the resources and support are accessible [15]. As a rapidly evolving

technology, there is a lack of legislative framework and infrastructure support for the usage of cryptocurrencies in developing nations. Furthermore, cryptocurrency-related virtual communities such as online forums and social media groups for advising and motivating individuals to adopt Bitcoin are in their early stages. Previous studies considered the facilitating circumstance as a critical predictor of the intention to use cryptocurrencies [27],[28],[29]. On the other hand, it has been found, that there is no substantial effect of facilitating conditions on cryptocurrency acceptance [45]. Accordingly, this study proposes:

H1*:* Facilitating condition has a positive influence on cryptocurrency adoption intention.

3.2 Social Influence

Social influence is related to how much influence people perceive from their peers and family members to use cryptocurrency [26],[27]. Previous research denoted that an individual's behavioral intent to use technology is significantly influenced by the opinions of peer groups, family members, and other existing technology users [12]. Furthermore, literature emphasizes the power of word-of-mouth in changing people's perspectives. Several studies have found that social impact positively influences behavioral intention to utilize innovation [31],[32],[22].

Likewise, the motivating role of social influence in users' intentions to utilize cryptocurrencies was emphasized by [35]. Nonetheless, it was claimed that social influence had a minimal effect on cryptocurrency adoption [36]. When users have minimal information about new technology, social influence plays an important role in their intention to utilize it [29].

Cryptocurrency is a new technology, thus customers in Malaysia have little information about it. As a result, it is predicted that the favorable influence of friends or loved ones on the benefits of Bitcoin will positively influence an individual's behavioral intention to adopt cryptocurrency. It was stated that social influence has a positive impact on users' intentions to use cryptocurrency [35]. Thus, this research articulated:

H2: Social influence has a positive influence on cryptocurrency adoption intention.

3.3 Awareness

Awareness is defined as an individual's knowledge of innovation and the benefits of its adoption [27]. In this study, awareness is defined as consumers' knowledge of Bitcoin and its benefits. The importance of awareness in technology adoption was originally discussed in an innovation diffusion theory [38]. Cryptocurrency is an emerging technology. As a result, customers' understanding of the benefits of cryptocurrencies is limited, particularly in emerging markets like Malaysia. Therefore, more awareness of technology and its benefits improves perception of the benefits [38]. Certain studies have demonstrated a positive impact of awareness on users' intention to adopt cryptocurrency [28],[28],[33]. In a contract, a lack of information about cryptocurrency may impede customer acceptance [24]. Consequently, this study hypothesizes:

H3: Awareness has a positive influence on cryptocurrency adoption intention.

3.4 Security

Security refers to an individual's sense of protection from online threats when utilizing technology. People avoid using technology because they are insecure about it [17]. Cryptocurrency transactions are conducted digitally. Consumers may be concerned about potential financial loss, theft, or failure due to cybercrime [40]. The security of Bitcoin would increase people's confidence in using the system, allowing cryptocurrency to fulfill its full potential as a replacement for physical cash [41]. Users' behavioral desire to use cryptocurrencies is expected to increase if they regard it as a secure monetary system [16].

Existing studies asserted security as a factor in individuals' inclination to adopt digital currencies [17]-[20]. Similarly, a shortage of security has negatively affected the adoption of cryptocurrency [16]. Hence, the more consumers view

cryptocurrency as a secure technology, the more likely they will use it. Thus, the present study proposes:
H4: Security has a positive influence on cryptocurrency adoption intention.

3.5 Trust

Trust is the willingness to rely on something or someone because you believe they are trustworthy. Trust is defined as faith or confidence in a system's ability to accomplish all of its intended functions. In this sense, trust was categorized into two groups: (1) faith or confidence in the trustworthiness of another person, and (2) behavioral intentions involving ambiguity and vulnerability [47]. Previous research demonstrated that an individual's behavior changes depending on their level of confidence in Internet transactions [33]. Because of the financial risk involved, online payment systems require the highest confidence [24]. Additionally, it was discovered that the element of trust increases consumer commitment to online transactions [32]. Similarly, it was confirmed that trust is a favorable predictor of using cryptocurrency as a payment method [28]. Hence, this research theorizes:
H5: Trust has a positive influence on cryptocurrency adoption intention.

4. RESEARCH METHODOLOGY

The study population consists of individuals with a potential interest in cryptocurrency adoption. Only 197 of the 280 questionnaires intended for the sample were completed and returned. Therefore, 83 % of the response rate was accomplished. The survey was developed to gather data on the participant's awareness of the attributes of cryptocurrency, as well as their intention to adopt it in the future. Likert-type scaling (1 = strongly disagree and 5 = strongly agree) was used to measure this data.

This section had a total of 35 items, most of which were taken from earlier studies carried out in other contexts, as well as from recent cryptocurrency literature with the appropriate modifications made for the background of this study. The gender, age, and educational attainment of the respondents were among the details uncovered in the second phase of the questionnaire. The English language was used to design and distribute the questionnaire. SEM and SPSS version 29 were utilized to analyze the collected data. These methods were chosen with inspiration from previous research in this field and the recommendations of [52],[53].

Based on Table 1, 37% of respondents were men and 63% of respondents were women. Regarding age grouping, 47.8% of respondents are between the ages of 25 and 34, followed by 18.9% who are between the ages of 35 and 44, 31.4% who are between the ages of 18 and 24, and 8% who are 45 and older. Considering education level, 65% of the respondents had a degree, while 12% had a diploma. and 5% of respondents have STPM, 4% have certificates, and 8% of respondents have each earned a postgraduate degree. However, 4% of holders are STPM/STPMV and other holders (each one). exceed the 0.5 criterion, ranging from 0.541 to 0.792, indicating that the underlying constructs account for more than 50% of the variance in the observed variables.

Also, all factor loadings are greater than 0.5, indicating a high correlation between the latent constructs and the observable variables. In summary, these results support the achievement of convergent validity in this model by showing that all necessary conditions for convergent validity have been achieved. This confirms the measurement model's robustness and reliability by illustrating that the items measuring each construct are representative of the corresponding underlying constructs and share a sizable amount of common variation.

Table 1: Demographic Profile

Demographics	Categories	Percentage
Gender	Male Female	37 63
Age	18-24 25-34 35-44 44 and above	31.4 47.8 19.9 8.0
Educational Level	STPM /SPMV STPM Certificate Diploma Bachelor Postgraduate degree Others	4.0 5.0 4.0 12.0 65.0 8.0 4.0

Table 2: Convergent Validity Measures

Constructs	Cronbach's Alpha	AVE
Facilitating Conditions	0.864	0.661
Social Influence	0.895	0.747
Awareness	0.869	0.698
Security	0.874	0.543
Trust	0.842	0.782

5. RESULTS

Numerous critical metrics were included in the analysis to assess the reliability and validity of the structural model used in the Structural Equation Modeling (SEM) approach: nomological validity, convergent validity, discriminant validity, and face validity. Employing average variance extracted (AVE), factor loadings, and reliability measures (Cronbach's alpha for this research), convergent validity which guarantees that items assessing a given concept have a large proportion of shared variance was assessed.

Cronbach's alpha of 0.6 or above is considered acceptable by [53], while an AVE and factor loadings of 0.5 or above are viewed as satisfactory. Table 2 of this study demonstrates that the range of Cronbach's alpha values is between 0.839 and 0.895 which presents a high level of internal consistency between the measures used to measure each element. In addition, the AVE values Discriminant validity, or the idea that each construct in the model must be different from the other constructions, is another prerequisite for validity. Comparably, discrimination validity can be evaluated in a variety of ways. The fit indices for the baseline and limited models were then compared, with the connection between the components in this study fixed at 1. Hence, if there is a significant difference in the fit indicated between the two models, discriminant validity is attained.

Meaningfully, Table 3's results illustrate that the baseline model's chi-square (x2) value was 1,339.197 with 552 degrees of freedom, while the limited models' x2 value was 1,607.716 with 545 degrees of freedom.

This shows a difference in the degree of freedom of seven and an x2 difference of 1,229.197. The fit indices for the restricted models and baseline models differ dramatically. Accordingly, this model attains discriminant validity. Similarly, the face validity and nomological validity were verified by consulting the experts in this field.

Table 3: Discriminant Validity Measures

Elements	Chi-square	DF
Baseline model	1,339.197	552
Restricted model	1,607.716	545
Changes	268.537	7

Finally, the results demonstrated that the model's comparative fit score is 0.839 and the RMSEA value is 0.023. For both measures, these levels are acceptable [44],[47],[54]. Therefore, the model's validation is confirmed.

Table 4: Standardized Total Effects

Variables	STF
Facilitating Conditions	.515
Social Influence	.465
Awareness	.343
Security	.087
Trust	.129

6. HYPOTHESES TESTING

The hypotheses articulated above are examined by using path analysis, which is

demonstrated in Table 4. Cryptocurrency adoption intention was significantly impacted by facilitating conditions. Thus, Hypothesis 1 is supported. This finding is in line with [20] This refers to the existing laws, circulars, and policies established that support cryptocurrency acceptance, the political conditions, and the government's willingness to support cryptocurrency adoption. All these features have a significant impact on individuals' intention to adopt cryptocurrency. Moreover, social influence was found to have a positive and significant effect on an individual's behavioral intention to adopt cryptocurrency investment. Thus, hypothesis H2 is supported. The finding was in agreement with [35],[36] who exposed that the opinions of close and loved ones, for instance, friends and family members on the benefits of cryptocurrency influence behavioral intent toward cryptocurrency acceptance among university students in Saudi Arabia. Similarly, awareness was exposed to have a significant positive effect on individuals' intention to adopt cryptocurrency.

Accordingly, Hypothesis 3 is supported. This result is in line with [11] who indicated that awareness and knowledge of cryptocurrency have an important influence on using it. It is noteworthy that awareness is demonstrated in aspects of respondents' access to general information about cryptocurrency and its benefits and possible risks. Predominantly, the participants observe themselves to have a good amount of awareness and knowledge concerning cryptocurrency adoption, which has positively affected their views of cryptocurrencies and their intention to adopt cryptocurrency in investment. However, security was identified to have a significant effect on individuals' intention to adopt cryptocurrency.

Consequently, H4 is supported. This result is in line with [19] who stressed the perception of concern for the safety of monetary transactions related to cryptocurrency usage among users. Lastly, trust was identified to have no significant impact on individuals' intention to adopt cryptocurrency, which is not supported by [8][9] who pointed out that users trust a currency when is issued by the authority compared to a cryptographic currency.

As such Hypothesis 5 is rejected in the present study due to a few reasons; the nature of the cryptocurrency market since it is decentralized, there is no central authority responsible for the issuance and there is no need to include a trusted third party when making online transfers [14]. The outcomes summarized that individuals' intention to adopt cryptocurrency could be impacted by other determinants rather than trust.

7. LIMITATIONS AND FUTURE DIRECTIONS

The current study has several potential limitations that need to be considered. First of all, the employment of a cross-sectional research design and self-report survey may prevent inferences of causality and not be able to cover progressive changes, to address this challenge, experimental and text-mining methods can be adopted in future studies. Second, the developed model does not cover a comprehensive list of factors affecting cryptocurrency investment. Consequently, it should be considered as an underpinning for further exploration which intends for a more inclusive understanding of this phenomenon.

Given that many consumers are dealing with cryptocurrencies as investment assets, it would be valued to include the inherent features and risks associated with cryptocurrencies as an investment tool for example perceived risk, liquidity, and price value into future studies, and explore the impact of these factors in user attitude toward cryptocurrency investment.

Third, although the Structural Equation Modeling (SEM) technique was utilized in the case of this study, alternative theoretical vantage points or approaches can provide vital insights and deepen our comprehension of the phenomenon.

Eventually, longitudinal research on the adoption of cryptocurrency can provide new perspectives on the dynamics of adoption behavior

and how it changes in reaction to shifting market dynamics, legislative changes, and technical breakthroughs. Accordingly, drawing attention to these limitations in the following research might help to gain a deeper understanding of the usage behavior of cryptocurrency and how it influences consumers and financial markets globally.

8. DISCUSSION AND CONCLUSION

This research mainly intended to explore the determinants influencing cryptocurrency adoption intention among individuals by employing structural equation modeling (SEM). The findings exposed that certain factors including facilitating conditions, social influence, awareness, and security may have a positive effect on users' choices toward cryptocurrency adoption. However, it was shown that trust did not significantly affect individuals' intention of cryptocurrency adoption. The importance of these findings is significant for practitioners, academics, and policymakers.

The study highlights the aspects of cryptocurrency adoption behavior that may be at odds with the cultural and social values of the users. Thus, the results could enhance the understanding of cryptocurrency adoption intention. The Unified Theory of Acceptance and Use of Technology (UTAUT) theory is also extended in this study to a different setting and to a different new area of study that has yet to be empirically explored. In addition, the current research offers perceptions to the regulators and practitioners on the facets that are required to be addressed to improve the cryptocurrencies' adoption and usage among individuals.

Also, cryptocurrency and similar virtual currency can be more operative means of exchange than traditional money. Accordingly, more investigations are needed. Meanwhile, due to the quick development of monetary technology, financial advisers and other stakeholders should stay up to date on the most current progressions in both knowledge and skills.

Failure to adopt to these trends may cause users to search for alternative financial advisory platforms that deliver more effective, elastic, and cost-saving services, posing a challenge to traditional financial institutions and advisors. The findings of this work could be used to motivate individuals to adopt cryptocurrency.

ACKNOWLEDGMENTS

This research was supported by the Ministry of Higher Education (MoHE) of Malaysia through the Fundamental Research Grant Scheme (FRGS/1/2022/ICT03/UUM/02/3).

REFERENCES

[1] G. A. Abbasi, L. Y. Tiew, J. Tang, Y. N. Goh, and R. Thurasamy, "The adoption of cryptocurrency as a disruptive force: Deep learning-based dual stage structural equation modeling and artificial neural network analysis," PLOS ONE, vol. 16, no. 3, p. e0247582, Mar. 2021, doi: 10.1371/journal.pone.0247582.

[2] N. Abu Bakar, S. Rosbi, and K. Uzaki, "Cryptocurrency framework diagnostics from Islamic finance perspective: A new insight of bitcoin system transaction," International Journal of Management Science and Business Administration, vol. 4, no. 1, pp. 19-28, 2017.

[3] A. Adapa, F. F.-H. Nah, R. H. Hall, K. Siau, and S. N. Smith, "Factors influencing the adoption of smart wearable devices," International Journal of Human-Computer Interaction, vol. 34, no. 5, pp. 399–409, May 2018, doi: 10.1080/10447318.2017.1357902.

[4] I. Ajzen, "The theory of planned behavior," Organizational Behavior and Human Decision Processes, vol. 50, no. 2, pp. 179-211, Dec. 1991.

[5] A. Al Shehhi, M. Oudah, and Z. Aung, "Investigating factors behind choosing a cryptocurrency," in 2014 IEEE International Conference on Industrial Engineering and Engineering Management, 2014, pp. 1443-1447, doi: 10.1109/IEEM.2014.7058830.

[6] A. A. Alalwan, Y. K. Dwivedi, and N. P. Rana, "Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust," International Journal of Information Management, vol. 37, no. 3, pp. 99-110, Jun. 2017, doi: 10.1016/j.ijinfomgt.2017.01.002.

[7] R. Al-Amri, N. H. Zakaria, A. Habbal, and S. Hassan, "Cryptocurrency adoption: Current stage, opportunities, and open challenges," International Journal of Advanced Computer Research, vol. 9, no. 44, pp. 293–307, Mar. 2019, doi: 10.19101/IJACR.PID43.

[8] A. Alharbi and O. Sohaib, "Technology readiness and cryptocurrency adoption: PLS-SEM and deep learning neural network analysis," IEEE Access, vol. 9, pp. 21388–21394, Feb. 2021, doi: 10.1109/ACCESS.2021.3055785.

[9] S. A. Ali, N. L. Alomari, and N. L. Abdullah, "Factors influencing the behavioral intention to use cryptocurrency among Saudi Arabian public university students: Moderating role of financial literacy," Cogent Business & Management, vol. 10, no. 1, p. 2178092, Feb. 2023, doi: 10.1080/23311975.2023.2178092.

[10] D. A. Almajali, R. E. Masa'Deh, and Z. M. Dahalin, "Factors influencing the adoption of cryptocurrency in Jordan: An application of the extended TRA model," Cogent Social Sciences, vol. 8, no. 1, p. 2103901, Jul. 2022, doi: 10.1080/23311886.2022.2103901.

[11] Y. H. Al-Mamary, A. Shamsuddin, N. A. Abdul Hamid, and M. H. Al-Maamari, "Adoption of management information systems in context of Yemeni organizations: A structural equation modeling approach," Journal of Digital Information Management, vol. 13, no. 6, pp. 510-517, 2015.

[12] I. Almarashdeh, H. Bouzkraoui, A. Azouaoui, H. Youssef, L. Niharmine, A. A. Rahman, S. S. S. Yahaya, A. M. A. Atta, D. A. Egbe, and B. M. Murimo, "An overview of technology evolution: Investigating the factors influencing non-bitcoins users to adopt bitcoins as online payment transaction method," Journal of Theoretical and Applied Information Technology, vol. 96, no. 13, pp. 4129-4145, 2018. [Online]. Available: http://www.jatit.org/volumes/Vol96No13/1Vol96No13.pdf

[13] A. A. Al-Naimi, L. F. Alshouha, R. Kanakriyah, R. Al-Hindawi, and M. A. Alnaimi, "Capital structure, board size and firm performance: Evidence from Jordan," Academy of Strategic Management Journal, vol. 20, no. 6S, pp. 1-10, 2021.

[14] M. Arias-Oliva, J. Pelegrín-Borondo, and G. Matías-Clavero, "Variables influencing cryptocurrency use: A technology acceptance model in Spain," Frontiers in Psychology, vol. 10, p. 475, Mar. 2019, doi: 10.3389/fpsyg.2019.00475.

[15] S. Asif, "The halal and haram aspect of cryptocurrencies in Islam," Journal of Islamic Banking and Finance, vol. 35, no. 2, pp. 91-101, Jul. 2018. [Online]. Available: http://dx.doi.org/10.13140/RG.2.2.29593.52326

[16] A. F. Aysan, H. B. Demirtaş, and M. Saraç, "The ascent of bitcoin: Bibliometric analysis of bitcoin research," Journal of Risk and Financial Management, vol. 14, no. 9, p. 427, Sep. 2021, doi: 10.3390/jrfm14090427.

[17] A. W. Baur, J. Bühler, M. Bick, and C. S. Bonorden, "Cryptocurrencies as a disruption? Empirical findings on user adoption and future potential of bitcoin and co.," in Conference on e-Business, e-Services and e-Society, 2015.

[18] P. K. Beh, Y. Ganesan, M. Iranmanesh, and B. Foroughi, "Using smartwatches for fitness and health monitoring: The UTAUT2 combined with threat appraisal as moderators," Behavior & Information Technology, vol. 40, no. 3, pp. 282-299, 2021, doi: 10.1080/0144929X.2019.1685597.

[19] J. Bohr and M. Bashir, "Who uses bitcoin? An exploration of the bitcoin community," in 2014 Twelfth Annual International Conference on Privacy, Security and Trust, 2014, pp. 94-101, doi: 10.1109/PST.2014.6890928.

[20] A. A. Broyles, T. Leingpitul, R. H. Ross, and B. M. Foster, "Brand equity's antecedent/consequence relationships in cross-cultural settings," Journal of Product and Brand Management, vol. 19, no. 3, pp. 159-169, 2010.

[21] Y. Chang, S. F. Wong, H. Lee, and S. P. Jeong, "What motivates Chinese consumers to adopt FinTech services: A regulatory focus theory," in Proceedings of the 18th Annual International Conference on Electronic Commerce: e-Commerce in Smart Connected World, 2016, pp. 1-7, doi: 10.1145/2971603.2971613.

[22] C. Chen, "Identifying significant factors influencing consumer trust in an online travel site," Information Technology and Tourism, vol. 8, no. 3-4, pp. 197-214, Oct. 2006.

[23] CoinMarketCap, "Top 100 cryptocurrencies by market capitalization," May 17, 2020. [Online]. Available: https://coinmarketcap.com/

[24] Deloitte, "State-sponsored cryptocurrency: Adapting the best of Bitcoin's innovation to the payments ecosystem," May 18, 2016. [Online]. Available: https://www2.deloitte.com/content/dam/Deloitte

/au/Documents/financial-services/deloitte-au-fs-state-sponsored-cryptocurrency-180516.pdf

[25] N. A. Diep, C. Cocquyt, C. Zhu, and T. Vanwing, "Predicting adult learners' online participation: Effects of altruism, performance expectancy, and social capital," Computers & Education, vol. 101, pp. 84-101, Oct. 2016, doi: 10.1016/j.compedu.2016.06.002.

[26] T. Ermakova, B. Fabian, A. Baumann, M. Izmailov, and H. Krasnova, "Bitcoin: Drivers and impediments," SSRN, Aug. 2017, doi: 10.2139/ssrn.3017190.

[27] K. Yoo, K. Bae, E. Park, and T. Yang, "Understanding the diffusion and adoption of Bitcoin transaction services: the integrated approach," *Telematics and Informatics*, vol. 53, p. 101302, 2020, doi: 10.1016/j.tele.2019.101302.

[28] J. Ter Ji-Xi, Y. Salamzadeh, and A. P. Teoh, "Behavioral intention to use cryptocurrency in Malaysia: An empirical study," *The Bottom Line*, vol. 34, no. 2, pp. 170–197, 2021, doi: 10.1108/bl-08-2020-0053. [29] W. K. Härdle, C. Harvey, and R. Reule, "Understanding cryptocurrencies," Journal of Financial Econometrics, vol. 18, no. 2, pp. 181-208, Apr. 2020, doi: 10.1093/jjfinec/nbz033.

[29] H. Treiblmaier, D. Leung, A. O. Kwok, and A. Tham, "Cryptocurrency adoption in travel and tourism – an exploratory study of Asia Pacific travellers," *Current Issues in Tourism*, vol. 24, no. 22, pp. 3165-3181, 2020, doi: 10.1080/13683500.2020.1863928.

[30] J. Koroma et al., "Assessing citizens' behavior towards Blockchain cryptocurrency adoption in the Mano river union states: mediation, moderation role of trust and ethical issues," *Technology in Society*, vol. 68, p. 101885, 2022, doi: 10.1016/j.techsoc.2022.101885.

[31] S. Quamara and A. K. Singh, "A systematic survey on security concerns in Cryptocurrencies: state-of-the-art and perspectives," *Computers and Security*, vol. 113, p. 102548, 2022, doi: 10.1016/j.cose.2021.102548.

[32] M. K. Anser, G. H. K. Zaigham, M. Imran Rasheed, A. H. Pitafi, J. Iqbal, and A. Luqman, "Social media usage and individuals' intentions toward adopting bitcoin: The role of the theory of planned behavior and perceived risk," *International Journal of Communication Systems*, vol. 33, no. 17, p. e4590, 2020, doi: 10.1002/dac.4590.

[33] B. A. Soomro, N. Shah, and N. A. A. Abdelwahed, "Intention to adopt cryptocurrency: a robust contribution of trust and the theory of planned behavior," *Journal of Economic and Administrative Sciences*, 2022, doi: 10.1108/JEAS-10-2021-0204.

[34] S. Gupta, S. Gupta, M. Mathew, and H. R. Sama, "Prioritizing intentions behind investment in cryptocurrency: a fuzzy analytical framework," *Journal of Economic Studies*, vol. 48, no. 8, pp. 1442-1459, 2020, doi: 10.1108/JES-06-2020-0285.

[35] S. Sukumaran, T. S. Bee, and S. Wasiuzzaman, "Adoption of Cryptocurrency Investment: Malaysian Context," *Networks and Systems*, vol. 495, Springer, Cham, 2023. doi: 10.1007/978-3-031-08954-1_97.

[36] S.-H. Hsu, "Understanding cryptocurrency adoption and its determinants," Journal of Organizational and End User Computing, vol. 34, no. 2, pp. 1-19, Mar. 2022, doi: 10.4018/JOEUC.20220301.oa1.

[37] H. C. Huang, H. Y. Lin, and C. S. Chiu, "Assessing the influences of different factors on the intention to use cryptocurrency: An extension of the UTAUT model," Sustainability, vol. 15, no. 10, p. 7973, May 2023, doi: 10.3390/su15107973.

[38] R. A. Järvinen and R. Suomi, "Understanding consumers' online shopping behavior: An integration of the theory of planned behavior and the technology acceptance model," Journal of Theoretical and Applied Electronic Commerce Research, vol. 11, no. 3, pp. 22-39, Sep. 2016, doi: 10.4067/S0718-18762016000300003.

[39] Y. J. Jeon and R. N. Ghosh, "Regulatory uncertainty and the bitcoin ecosystem: A call for standardization," in 2017 IEEE Technology and Engineering Management Conference (TEMSCON), 2017, pp. 156-160, doi: 10.1109/TEMSCON.2017.7998380.

[40] D. Jung, J. S. Hwang, and H. S. Kim, "Determinants of users' intention to use the internet as a new information service: Focusing on the interactivity and information quality of the internet," Journal of Information Technology Applications & Management, vol. 24, no. 1, pp. 27-42, 2017.

[41] K. Kalaignanam and R. Varadarajan, "Customer relationship management and firm performance: An empirical analysis," Journal of Marketing, vol. 70, no. 4, pp. 146-165, Oct. 2006, doi: 10.1509/jmkg.70.4.146.

[42] Y. Kim, D. J. Kim, and K. Wachter, "A study of mobile user engagement (MoEN): Engagement motivations, perceived value, satisfaction, and

continued engagement intention," Decision Support Systems, vol. 56, pp. 361-370, Apr. 2013, doi: 10.1016/j.dss.2013.07.002.

[43] C. M. Kong, "Regulatory issues on cryptocurrency and blockchain technology," SSRN, May 2017, doi: 10.2139/ssrn.2971554.

[44] S. Kraus, C. Palmer, N. Kailer, F. L. Kallinger, and J. Spitzer, "Digital entrepreneurship: A research agenda on new business models for the twenty-first century," International Journal of Entrepreneurial Behavior & Research, vol. 25, no. 2, pp. 353-375, Mar. 2019, doi: 10.1108/IJEBR-06-2018-0425.

[45] L. Kristoufek, "What are the main drivers of the bitcoin price? Evidence from wavelet coherence analysis," PLOS ONE, vol. 10, no. 4, p. e0123923, Apr. 2015, doi: 10.1371/journal.pone.0123923.

[46] M. W. Kusuma and S. Asrori, "The influence of perceived ease of use, perceived usefulness, and perceived risk on intention to use cryptocurrency in Indonesia," Journal of Information Systems Engineering and Business Intelligence, vol. 5, no. 1, pp. 24-30, Jan. 2019, doi: 10.20473/jisebi.5.1.24-30.

[47] K. C. Lee and H. H. Chang, "Consumer attitudes toward online shopping," Internet Research, vol. 21, no. 4, pp. 476-491, Aug. 2011, doi: 10.1108/10662241111158369.

[48] H. F. Lin, "Understanding the determinants of electronic supply chain management system adoption: Using the technology–organization–environment framework," Technological Forecasting and Social Change, vol. 86, pp. 80-92, Sep. 2014, doi: 10.1016/j.techfore.2013.08.035.

[49] Y. Liu and H. Li, "Understanding the factors influencing consumer willingness to use cross-border e-commerce: The role of perceived risk, perceived benefit, and trust," Journal of Retailing and Consumer Services, vol. 34, pp. 1-11, Sep. 2017, doi: 10.1016/j.jretconser.2016.09.006.

[50] Y. Liu and S. Tai, "A study on the influence of electronic word-of-mouth and trust on consumers' intention to purchase online: Evidence from China," Journal of Business Research,vol. 69, no. 12, pp. 4595-4602, Dec. 2016, doi: 10.1016/j.jbusres.2016.03.031.

[51] K. W. Lo, H. H. Liu, and W. H. Tseng, "An analysis of technology acceptance model using PLS-SEM," Journal of Economics, Business, and Management, vol. 4, no. 4, pp. 278-282, Apr. 2016, doi: 10.7763/JOEBM.2016.V4.402.

[52] R. Macik and A. Studzińska, "Consumer trust in the context of personalisation and privacy: Exploring the moderating effects of social media usage and gender," European Journal of Marketing, vol. 56, no. 13, pp. 1515-1545, Nov. 2022, doi: 10.1108/EJM-06-2021-0449.

[53] D. H. Mai and T. V. Hong, "Factors affecting the acceptance of blockchain technology by finance companies in Vietnam: An extension of the UTAUT model," Journal of Asian Finance, Economics, and Business, vol. 8, no. 5, pp. 1139-1149, May 2021, doi: 10.13106/jafeb.2021.vol8.no5.1139.

[54] S. Makuvaza and J. Hou, "Understanding the factors influencing user acceptance of mobile banking in Zimbabwe: An integration of TAM and UTAUT," Journal of Economics and International Finance, vol. 12, no. 2, pp. 53-63, Mar. 2020, doi: 10.5897/JEIF2020.1014